

GALEN ON FOOD AND DIET

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In memory of Fred Luck
1909–1993
and Maria Luck (née Szántó)
1899–1988
for their humanity and generosity

INTRODUCTION

The life of Galen

Medicine occupies a central position in our lives today. We expect to be diagnosed correctly and to receive the latest treatment based on extensive scientific research. The media enthusiastically recount breakthroughs in our understanding of disease, or complex operations that can restore our quality of life. Alongside this progress psychologists have noted our increasing bewilderment and even anger in the face of death. Wonder at what medicine can achieve is disturbed by what it cannot. It is difficult then to envisage a world where medicine could offer only some comfort and where death, especially among the very young, was always lurking as a very real threat. Yet many historians concede that palliative care by Galen would have been far preferable to anything that was to be available until the closing years of the nineteenth century.

Galen was born in AD 129 at Pergamum, a large city on the Aegean seaboard of what is now Turkey.¹ As his father was an architect and interested in education, Galen was given lessons in mathematics and geometry. For a child from a wealthy background this was in some ways unusual, the emphasis in Roman schools being on the literature and rhetoric necessary for a career as a lawyer or a town councillor. On the other hand architecture, whilst an essential part of Roman civilisation, was not a profession that commanded a particularly high status. This liberal and in some ways radical background allowed Galen the scope to experiment: he was not bound by his family to enter into what was regarded as a traditionally safe career. Moreover, since Pergamum had long been an intellectual and cultural centre, Galen was able to attend the lectures of the Stoic and Platonist philosophers who were attracted to the city by its great library. It is an indication of his mental abilities that Galen was only fourteen when he began these studies.

In addition to its academic excellence, Pergamum was a religious centre with a large sanctuary dedicated to Asclepius. As the son of Apollo, Asclepius acted like a bridge between the divine and the human, for although he was a powerful deity, he was nevertheless concerned enough with mortals to try to combat death through his patronage of medicine. Healing by psychological means was conducted at temples around the Roman world, the sick sleeping in the precincts in the hope of dreaming about their own particular cures.² Even outside the temples, dreams were held to predict the future and advise on future courses of action. When Galen was seventeen his father received such a sign: he was to study medicine.

Hippocrates wrote in the fifth century BC that a good doctor should travel.³ On the death of his father in AD 148 (or perhaps AD 149), Galen spent a number of years training with medical experts in Smyrna, Corinth and Alexandria.⁴ There was no uniform medical curriculum or even a shared belief in how the body worked. Instead there were groups of adherents to several different theories, sometimes referred to as schools, based around opposing philosophical premises.⁵ Now fully trained, Galen returned to Pergamum in AD 157 and became the doctor to the gladiatorial school in the city. Again, this was an unusual step for an educated person. Gladiators may have fascinated the Romans by their oath of submission to death, but they were still considered socially to be very low or even outside the accepted laws of normal society.⁶

What Galen presumably gained from this appointment was a detailed knowledge of anatomy. Contrary to modern popular belief, gladiators did not usually fight deliberately to the death, especially in a provincial city like Pergamum. Whilst Rome could afford mass slaughter, the expense of training and maintaining gladiators meant that any other city had to harbour its resources. Gladiators were taught to draw blood for the entertainment of the spectators, but once outside the arena doctors were at hand to stitch and bandage ready for the next show. That is not to say that death was avoided, yet it was not a foregone conclusion.⁷ Working with gladiators also allowed Galen to experiment with regulating the diet for healing and building strength. In many instances diet was the only resource that could be applied, so its prominence in all ancient medical writings is understandable.

In the absence of a police force, except in Rome itself, ancient cities were prone to social unrest. The autumn of AD 161 saw Galen leaving Pergamum to avoid being caught up in such an event, perhaps provoked by the sort of food shortages that he mentions throughout his dietetic writings. He travelled around the eastern Mediterranean, researching the properties of

various plants and minerals used medicinally in Lemnos, Cyprus and Palestinian Syria (modern Israel), before reaching Rome in the summer of the following year.⁸

Marcus Aurelius had just become emperor. Rome was at the height of its power and prosperity. Galen began to build up his reputation in the capital, giving public lectures and anatomical demonstrations and writing about anatomy. These endeavours came to a close in the summer of AD 166. A Roman army returning from a campaign in the Middle East brought with it the plague and Galen seems to have thought it wiser to return to Pergamum than to try to practise his medicine on those afflicted. In addition, his growing influence had made him numerous enemies among the medical profession and in the face of this violent jealousy he began to harbour doubts about his own physical safety. His efforts, however, had made him famous enough for Marcus Aurelius to invite in AD 168 him to join his military headquarters at Aquileia in northern Italy. Moving to Rome the next year with the imperial family because of another outbreak of the plague, Galen spent the rest of his life in the capital. He became so successful that he was appointed as personal physician to Marcus Aurelius himself. His voluminous writings he authenticated in his treatise *On My Own Books*.⁹ It is now thought that he died in about AD 210, although earlier estimates put his death at about AD 200.

Galen the doctor

The name of Archagathus has been passed down as the first Greek doctor to have practised at Rome. According to Pliny (*Nat.* 29.6.12–13) he set up his surgery in the capital in 219 BC.¹⁰ Both he and his successors were very much engaged with the upper echelons of society that had developed a keen taste for all things Greek, following the wars of conquest that ended with the complete subjugation of that country by Aemilius Paullus in 168 BC. At the same time the lower classes were deeply suspicious of doctors, preferring home cures passed down through the family, magic and astrology, and the assistance of herbalists. Yet from the diverse evidence of writers such as Cicero, Seneca and Plutarch, a general picture can be constructed of what a Roman aristocrat demanded of a doctor, in particular the sort of friendship that could offer comfort throughout the duration of an illness.¹¹

Educated Romans were for the most part conversant with current medical theories. For example Cicero (*Cic.ND* 2.137–8) describes in

precise detail how the body was believed to process food, the disquisition only ending to avoid any possible offence over the nature of defaecation. Celsus, writing in the time of the emperor Tiberius (AD 14–37), wrote an encyclopaedia whose extant part discusses medicine in a tone that seems to reflect an educated person's view of the discipline.¹² Later in the first century AD Seneca makes frequent remarks in his letters about his illnesses and alludes to the sort of help that might be expected in such cases, whilst Pliny pays great attention in his *Natural History* to the broad scope of medicine as it stood in his day.¹³ Petronius (*Petr.*42.5–6) even satirises medicine, focusing on the notion that an illness could be restrained by a starvation diet (*Hp.Nat.Hom.*9=6.54–6L). Not only that, but medical books were available from shops in the Argiletum, open lectures were presented by practising doctors, and surgeons would demonstrate their prowess with the knife in front of audiences.¹⁴

But how Galen fits into this picture is still open to debate. Modern consensus seems to suggest that the status of doctors in the eastern part of the empire was greater than that of their counterparts in the western part, although paucity of evidence must be held up as a strong caveat in this discussion.¹⁵ Patronage is, however, almost certainly the answer to Galen's rapid rise to fame. His family was connected with the leading citizens of Pergamum, and these in turn had connections with the influential and powerful in Rome; so when he arrived in the capital in AD 161, he could quickly become friends with senators and others in the imperial court. Right from the start he was in a far higher position socially than most other doctors who similarly came from the eastern Mediterranean.¹⁶ His private means are further demonstrated when he left Rome the following year, for he had to employ an auctioneer to sell off his house in Rome (*Prog.*9.2=14.648K) – he was no struggling tiro waiting on the largesse of others.

It has been pointed out that Galen was not the only doctor to have a strong showing in both medicine as well as other intellectual pursuits. Thrassippus of Corinth, for instance, was deemed pre-eminent in medicine and poetry.¹⁷ Where Galen was different was in his combative style of rhetoric, his overwhelming sense of self worth and importance, his literary productivity that was enormous by any standard, and his blind assumption that he alone was graced with the ability to bring Hippocrates' work to completion. That he was able to write so much was, of course, due to his use of other medical works as a core outline.¹⁸ Even if he did add further comments as he thought appropriate, his overall knowledge of medicine was by no means dissimilar from that of his contemporaries. He may have served as physician to the Roman elite, but his writings on food and diet

can be used as a legitimate source of what generally counted for medicine in his time.

The Hippocratic background

Throughout Galen's writings the name of Hippocrates is invoked, either in support of a particular idea or to ridicule the views of an opponent. Sometimes Galen goes as far as to idealise Hippocrates almost as if he were a god (e.g. *Gal.Us.Part.*1.9=1.16K). There were several factors which seem to have contributed to this point of view. To begin with, writers of the second century AD were particularly fascinated with the classical past, whether its literary style or philosophical ideas. The former tendency is derided by Galen throughout his dietetic works, for he believed that current nomenclature and phraseology were far to be preferred over archaising sentences (e.g. *Gal.Alim.fac.*2.44.5=6.633K); the latter Galen believed in very strongly, because for him Hippocrates had discovered all that there was to know about medicine, and all that needed to be done was to interpret and explain his theories in more detail.

Even from the time of Hesiod (*Hes.Op.*109 ff) the ancient world had looked back to a mythological golden age when life was good, simple and healthy. Galen had no single philosophical basis for his science because there were so many competing theories about how the body functioned; his teachers had revered Hippocrates and had taught him to commit certain apothegms to memory. This procedure accorded well with rhetorical practice and its need for pithy statements by which arguments could be supported. Otherwise known as 'the pointed style', it was preferred by writers such as Seneca and Tacitus. It is easy to view Galen's adherence to this method with some cynicism, because he often could not remember where some Hippocratic quotes derived, and yet he was always certain that he knew exactly what an ambiguous statement in Hippocrates actually meant.¹⁹ None the less the method behind this reasoning served as a sound support for his practice of medicine and for his place in Roman society.

Galen's teachers were certainly not unique in their reverence for Hippocrates. Even in the fourth century BC the legend of Hippocrates as the perfect doctor existed, saving patients from the plague, resisting the financial inducements of the Persian king, above all working strenuously as a Greek among fellow Greeks.²⁰ When the emperor Marcus Aurelius called Galen the finest doctor and a unique philosopher (*Gal.Praen.*11=14.660K), this was as a compliment to the image Galen had constructed of himself, an expert in classical ideas despite the decadence of the contemporary world.²¹

To carve a niche in Roman society meant fighting fierce competition. But claiming that all he was doing was to elucidate Hippocrates' ideas gave Galen the wherewithal to win this fight. If an opponent attacked him, then that opponent was attacking Hippocrates, and who could have prevailed against such a potent and hallowed legend?

Diet within medicine

Scribonius Largus, writing at the time of the emperor Claudius (AD 41–54), summed up the stages of medical care (*Scrib.Larg.intr.6*): first came diet, then drugs, and finally either cautery or surgery. Omitted from this list is venesection because not all the schools of medicine advocated this procedure. Diet was therefore not the only way by which disease could be treated, although it was perhaps the most important. As Scribonius Largus states elsewhere (*Scrib.Larg.intr.2*), most people were terrified of the knife or hot iron, but there were factors other than fear behind this emphasis on diet.²² Plutarch (*Plu.Mor.73D*) held that a good doctor was someone who used sleep and diet rather than violent drugs to effect a cure.

Manual work denoted a low social status in the Roman world, yet surgery obviously depended wholly on the knowledge gained from actual experience. This awkwardness can perhaps be seen in the arguments promulgated by some doctors in support of this learning by trial and error.²³ To achieve greater prestige, a doctor had to avoid dirty hands. As Galen was only too well aware, philosophy was the key to this respectability. On the one hand a training in philosophy may have allowed a doctor to communicate more effectively with patients, whilst on the other hand it created the feeling of trust and friendship that Seneca stressed was so important for medical practice and technique.²⁴ Even so, medicine was considered, by the upper end of Roman society, a craft to be shared with slaves and freedmen, a prejudice that did not begin to dissipate until the later empire.²⁵

It has been estimated that some 80 per cent of the patients Galen recorded in his works belonged to the elite, whereas only 46 per cent were sophists and 21 per cent were of the lower classes.²⁶ He himself said that he wrote for Greeks and for anyone who, whilst not actually Greek, at least made efforts to attain the qualities of the Greeks (*Gal.San.Tuend.1.10*=6.51K). If this statement referred to those educated in Greek literature and philosophy, then his focus was very much on the rich and powerful. Moreover, the intimacy demanded by dietetic medicine of the patient's way of life made for a pronounced concentration on the upper strata of society, for only they could afford the time and the expense such

details naturally required.²⁷ Prescribing a diet backed by humoral science to these patients kept a doctor's hands clean and gave a definite intellectual cachet to the interaction.

That a good diet ensured health was a fundamental concept of ancient medicine, since food could cause disease or restore health through its effect on the balance of the humours. Thus prevention was in every way better than a cure. By contrast drugs, venesection, cautery and surgery were drastic, to be used only when diet could no longer help. But there was another idea behind this reliance on diet: everyone had it in their power to control their way of life and this gave to food a moral dimension that accorded well with contemporary Stoic views on life.²⁸ Moderation and balance were essential in the pursuit of truth and the ultimate good. Diet was therefore raised from mere eating for the sustenance of the body to a higher philosophical plane that bolstered its importance within medicine as a whole.

Some foods could also serve as drugs. For example, edder-wort had to be boiled two or three times before its medicinal quality was removed (*Gal.Alim.fac.2.62.1*=6.649–50K). What mattered was the manner and the circumstances under which a particular substance was applied, since the same substance could act as a food or as a drug.²⁹ From the evidence of Galen's dietetic works, a substance generally could be classified as a food if it did not have a pronounced effect on the body – whether that effect was diuretic, laxative, cathartic or the like – whilst a drug acted forcibly as a purge, vermifuge, emetic or similar. So through careful preparation, cooking and seasoning whatever was normally regarded as a drug could be rendered as a food.

Galen's view of the body

Cooking was a process that was believed, in Hippocratic medicine, to be applicable not only to the ripening of fruit and vegetables, but also to the process of digestion. Opposite, therefore, to the concept of raw and unripe were coction and ripeness. The innate heat of the body cooked foods. Thus Dioscorides (*Dsc.2.110.1*) could describe a stomach burning with an intense heat. By the same token, the more foods had been processed and cooked in the kitchen, the more easily they could be digested in the body.³⁰ Galen does not set out his ideas about the digestion as a coherent theory, but rather his views on the subject have to be drawn together from across the whole gamut of his writings.³¹ In broad outline, he thought that food and drink were partly digested in the stomach. The resulting material then

entered the liver through the first veins (which we now call the portal system) to be converted into blood. From the liver the veins carried the blood, now fortified with nourishment, to all the parts of the body. Air, however, was needed for the maintenance of this bodily warmth. This was drawn in through the lungs and the pores of the skin. As with a fire, smoke was produced during the creation of heat and the digestion of food and drink. So when discussing milk, Galen (*Gal.Simpl.Med.*2.13=11.491K) holds that in some people it is turned into a fatty smoke. Here the arteries acted as the vents for the burning process, at the same time as regulating the temperature of the body.

The circulation of the blood was never discovered by Galen, but there was posited instead the gradual ebb and flow of blood through the body. There is a focus on blood throughout ancient medical writings, primarily because it is so easy to see, whether in wounds or in menstruation. One of the main problems that doctors tried to combat was fever, always present in infectious conditions like the common cold and transmitted diseases such as malaria. Many ancient doctors thought that there was only one cause of fever. Galen, on the other hand, argued that there were three causes: first, overheating through exposure to the sun, particular foods and drinks, or problems with transpiration; second, inflammation (accompanied possibly by putrefaction) of excrementitious matter, that is residues left in the body after digestion; and third, the flux of humours to a particular part of the body that subsequently putrefies. A carefully regulated diet could help avoid the production of anything excrementitious. If such matter did accumulate, then venesection was the best way to draw it off. But whereas the Methodics had argued that in venesection one rule applied to all, Galen was adamant that a doctor had to match a diet or the tapping of blood to the individual patient, because everyone was by temperament different.³²

Dietetics according to Galen

Modern medicine can be divided into several discrete areas. At the forefront is western scientific medicine, explaining disease through the physical and chemical world. But even traditionalists acknowledge the potential effectiveness of alternative medicine, whether it is based on heavily diluted extracts of wild plants or the application of specially scented oils by massage. Then again there are eastern forms of medicine like acupuncture that can provide relief from a range of ailments. This wealth of ideas is mentioned because so often ancient medicine is criticised for its incoherence, yet the different schools of thought can in some ways be compared to

the wide range of contemporary ideas regarding healing. The analogy is not of course complete, because in the ancient world there was no dominant mode of practice until Galen made his appearance. His great contribution was to try to systematise the various avenues earlier doctors had taken. Despite his own apparent misgivings about this systematisation, and his belief that further research should be conducted along the lines that he suggested, he was so successful that his writings eclipsed those of his contemporaries to the extent that few of these survive today.

Galen was uniquely equipped to make a mark on medicine. On a purely practical level, he was of independent means thanks to the legacy of his father. That meant he could write and work at his own leisure without having to look to a demanding patron.³³ As regards theory, he was extremely well educated, especially in philosophy and rhetoric. This enabled him to attack his rivals in a sharp and logical fashion. No doubt the audiences at his public lectures enjoyed his verbal thrusts and quirky humour.³⁴ Yet it was philosophy that Galen regarded as underpinning his ideas. Philosophy had always been held in great honour among both the Greeks and the Romans, while medicine suffered from poor esteem. It is true that the status of doctors had begun to rise under the empire, although the fact that the training of slaves into the profession had to be suppressed, indicates the underlying attitude of society.³⁵ Galen's emphasis on philosophy as a key to becoming a good doctor may be his attempt to link the honoured with the maligned disciplines. It certainly gave him the prestige to mingle with the upper echelons of society, if not as an equal, then certainly as someone to be admired.

While philosophy may have raised the status of medicine, it also hindered the substantiation of ideas. Stoicism, in particular, involved the use of the conditional to prove a hypothesis. So in Galen the admonition recurs frequently as to how a point that is about to be made is obvious from the subsequent inference.³⁶ There is, nevertheless, a certain logic to Galen's discussion of diet and food. To summarise this discussion very briefly, Galen asserted that health could be maintained only when the four humours were evenly balanced within the body. Comprising blood, phlegm, black bile and yellow bile, the humours could break with this symmetry if the body was abused, either through a faulty diet, unaccustomed exercise or a change of climate. Interacting with the humours were the four qualities to whose operation was attributed the birth and decay of all living things. The qualities consisted of hot, cold, wet and dry. Diseases were thought to occur when there was an imbalance of the humours or when there was an immoderate increase of one or more quality. Indigestion could be put down to an excess of phlegm brought on by excessive eating.

In order to counteract this complaint, a hot and drying remedy would be prescribed, consisting perhaps of pepper and wine. A good doctor had to apply reason and experience to obtain the necessary knowledge and understanding of how foods worked. Some might be suitable for the old, but not for the young, whilst others might benefit the majority, but harm those who suffered from a pathological peculiarity.³⁷

The concept of logic in these writings on diet must, however, be qualified since there is some uncertainty about whether even Galen had a properly developed overview of what he was promulgating.³⁸ One of the difficulties lies in the dichotomy in ancient medicine that has already been raised, that is between a science founded on philosophical principles and a technique based on the observation of the body, the former being high in social status, the latter rather low. It is perhaps significant that *On the Powers of Foods* was published when Galen's medical and social position was not in question, for this work is very much a practical manual firmly rooted in the pathology of the body and the humours. On the other hand questions of orthography are raised not only just out of interest, but also because philology was considered a highly respectable pursuit. This is what makes these dietetic treatises so important, for they are both a record of medical practice and a commentary on the social mores of the Roman empire.

The treatises

Galen's most important dietary treatise is *On the Powers of Foods*. Written around AD 180, sometime after *On Hygiene* (Gal.*Alim.fac.*1.25.3=6.539K), it gives an encyclopaedic view of how the inhabitants of the Roman empire ate. It generally follows earlier treatises on the subject by Diocles, Mnesitheus, Philotimus and the Hippocratic treatise *On Diet*, relating the foods that can be matched to the temperaments of particular patients.³⁹ In geographical scope it ranges from Rome itself to the cities on the Aegean coast of what is now Turkey, and in social observation from peasants on the brink of starvation to the fashionable delicacies of the rich.⁴⁰ These divides obviously fascinated Galen, since he writes of the contrast between city and country (e.g. Gal.*Alim.fac.*2.48 and 68=6.636 and 657K), although how they were supposed to assist in the practice of diet he does not explain. It may be that they are no more than rural facts designed to interest a reader, perhaps eliciting a brief moment of surprise from his educated audience that anyone could behave quite so boorishly in the countryside. Such an explanation would certainly dovetail with the

amusing story of the leaden and drastically flatulent meal that Galen ate whilst out walking (Gal.*Alim.fac.*1.7.2-3=6.498-9K).

In this treatise foods are carefully classified according to their powers: salty or sweet, good or bad for the stomach, promoting one or other of the humours, sharp or bitter, sour or watery, easy or difficult to digest, slow or quick to pass through the body, costive or laxative, composed or fine or thick particles, cooling or heating. Often recipes are given, because Galen believed that a good doctor should also be a good cook.⁴¹ The short treatise *On Barley Soup* complements this larger work and provides an interesting view of Galen's polemical style, although the absence of any internal references to outside events or other works makes any attempt at affixing a date rather problematic.

The medical background to these two dietary works is given by the other texts. *On the Humours* is probably not by Galen, but it is included as a succinct synopsis of humoralism. In general it does not misrepresent Galen's finely nuanced view by giving more emphasis to the qualities rather than the quantities of the humours. It may have been written within a century of Galen's death.

In the course of considering one particular humour, the treatise *On Black Bile* adds further details about the importance of balancing all the humours within the body. That this was written after *On the Natural Faculties* (Gal.*Atr.Bil.*7=5.136K) suggests a date of composition not before the period AD 169 to 175. What happened when the balance went awry is described in *On Uneven Bad Temperament*. The ensuing diseases are featured in *On the Causes of Disease*, categorised according to whether they are hot, dry, wet or cold. A *terminus ante quam* can be established since this treatise mentions (*Caus.Morb.*6=7.23K) *On Therapeutic Method*, a work written sometime between AD 169 and AD 180, so it is reasonable to assume that it was composed at about the same period as *On the Powers of Foods*.⁴² A reference in *On Uneven Bad Temperament* (*Inaeq.Int.*7=7.748K) to *On the Causes of Disease* at least shows the temporal connection between these two works, although further precision is perhaps impossible.

A feature of these texts is the combative pose struck by Galen. Earlier writers like Erasistratus are derided, scorn is poured on those who cannot understand a seemingly simple idea and the impeccable logic of Galen's own arguments is stressed. As has been noted, medicine was not a uniform system, and publishing in antiquity meant reading aloud to a not always appreciative audience, so it was always necessary to buttress ideas with rhetoric. Whilst at times this style to a modern reader makes Galen seem on occasion egotistical, it is in fact no more than what his rivals were doing,

ON THE HUMOURS

Whatever the basic element of the world may be, among animals it is the humour, just as of course in the measurement of time it is the season. The humours do not possess a single identity or likeness: rather as regards their active and passive qualities, through which they both owe their existence and have constructed their origins in us, they differ from each other in many ways, and not least in their nomenclature. To begin at the beginning: the elements from which the world is made are air, fire, water and earth; the seasons from which the year is composed are spring, summer, winter and autumn; the humours from which animals and humans are composed are yellow bile, blood, phlegm and black bile.

The humours are all combined with moisture and heat, dryness and cold. Thus blood, air and spring are moist and hot (although some people might disagree with this statement regarding air); yellow bile, summer and fire are hot and dry, whilst black bile and earth and autumn are dry and cold; phlegm, water and winter are cold and moist. Humours, elements and seasons are both akin and divergent. For example, air and fire are not the same in dryness and moisture, but are united by their heat; fire and earth are not the same in coldness and heat, but are both very dry; similarly earth and water are cold, but they are set apart by their respective dryness and moisture; water and air are moist, but differ as to heat and coldness.

In the same way the humours and seasons agree and disagree with each other, thereby achieving what is called 'disharmonic' mixing. Yet regardless the elements never change and each remain in the same place, maintaining their permanence in any movement towards each other through nourishment that is provident and suitably proportioned; similarly the seasons occur and are named after the movements of the sun to the south and to the north.

The humours are not like the seasons because they differ amongst themselves in many ways: in place, colour, power, consistency and quality.

Moreover it is vital that the humours do change, just as the elements must change into one another, not always keeping to the same process of change or maintaining a balanced increase, although there is a certain pattern of mutation from what is earthy to what is watery, from what is watery to what is airy, and from what is airy to what is fiery. So there is an irregular change from phlegm to yellow bile, and from blood to black bile. The proof of this argument lies in earthy and melancholic blood, and salty phlegm which in many ways resembles blue bile and easily mutates into it. Phlegmatic bile and blood saturated with mucus present similar properties, as among people with a dropsical or cachetic condition, just as with unmixed yellow bile in people with a hotter and drier constitution. For those who suffer from indigestion, a green bile appears in vomiting and defaecation.

It is therefore in these sort of changes that what is dominant has precedence, whilst the opposite occurs when these changes occur through what is harmonious. A particular humour might on occasion metamorphose into one or another sort of humour according to temperature, time, place, age and diet: for all humours arise and increase at every moment and season. For example, in summer there is a predisposition towards bitter bile, especially among those people who have leanings towards this condition through age, constitution, diet or, above all, through external factors. The prime causes of yellow bile are stress, anger, emotional trauma, labour, physical exercise, insomnia, fasting and hunger. Phlegmatic bile comes about from sleep, drinking water, the consumption of sea food and moist diets in general, and viscous edibles that consist of thick particles. Blood is generated by meat, fowl, eggs and all those foods that are both wholesome and easy to cook, unless something special alters what is eaten. The same is true for black bile, but the surrounding circumstances are more complicated.

When we make proper use of foods in recipes, the attendant humours follow. The blood increases at puberty; hence teenagers are cheerful and enthusiastically disposed to games. But the yellow bile in adolescents makes for anger, sexual drive and bullying early in this stage of life; whilst later there is a surge of black bile, the worst sort of humour, since wherever it rushes it is hard to resist or divert, thus making this stage of life devious, revengeful and stubborn. In old age there is phlegm, when there reigns sluggishness, loss of memory and lethargy.¹ This is because old age is moist and cold, just as the prime of life is dry and cold. Puberty is hot and moist, whilst adolescence belongs to an analogous and superior humour.

The humours owe their origin, maintenance and movement as follows: for blood the liver, veins and both nostrils; for yellow bile the bladder, the area around the liver and the ears; for phlegm the stomach, loin muscles

and the mouth; for black bile the area below the liver, spleen and eyes, as has already been stated. As regards their colours, blood is red and phlegm is white; there are seven types of yellow bile (yellow, which people call basic, pale-yellow, red, leek-green, yolk-yellow, verdigris and woad); whilst the proper tint of black bile is of olive oil.

Blood is sweet to the taste; yellow bile is bitter; black bile is sharp; phlegm is ordinarily neutral, but it can also be salty, sharp and frequently sweet. There are four different types of black bile: one in the blood's sediment, another when yellow bile is overheated, another called 'tarry' because it has the shine of bitumen, and another by nature resembling blood. Further details can be added: blood and phlegm are by consistency thick, as is black bile. Yellow bile is thin, light and buoyant. The other two humours are heavy. Blood commands a central role in the distribution of heat.

It seems that health is characterised by the equality and symmetry of these humours. Diseases occur when the humours decrease or increase contrary to what is usual in terms of quantity, quality, shifting of position, irregular combination or putrefaction of whatever has rotted. Just as it can be said that diseases occur as a result of an excess of the humours, so health returns by means of the removal or of the addition of the humours, their thinness and thickness, and generally through their mildness and symmetry.

Hippocrates put this extremely neatly in the sixth book of his *Epidemics*: you should eject some humours by force, put some humours in, thin and temper the humours in one case, but not in another, for they furnish the sequence of remedies according to the cause of the disease.² The humours must be mixed precisely in quality and equal in quantity, so that health when prevalent may persevere, but when absent may be summoned. This is why they are called humours, because at the same time they aid humectation. It is clear that, if this is health, then such a condition is not disease, as has been shown. Since the types of disease are divided into different kinds, the differences in kind must be advanced from among the different causes. Humours are both causes and symptoms: the former is what occurs externally, the latter is what is meant by increase and decrease, that is, as has been stated before, according to age, time and the effect of diet, whenever these are radically changed.

This is what Hippocrates seems to be saying when he states that some humours flourish and prevail at one time, others at another time, adding that different complexions are due to the predominance of whatever humours are prevalent in a particular temperament, and that diseases arise according to the nature of the dominant humour in an individual. Moreover, in the introduction to his work *On Humours* he says: 'the colour of the humours, when they are not disturbed, is like that of the flowers'.³

The predominance of the humours generally changes according to the passing of the various stages of life, just as it seems the characteristics of the soul change. Even that is delineated by the humours. Blood causes a cheerful nature; yellow bile a nature that is angry, insolent or fierce; phlegm a lazier and more stupid nature; black bile a nature that is more impetuous and angry. The character of the soul can be altered in diseases through the kind of humour that is dominant, as in the case of delirium. All diseases that come about because of blood are accompanied by singing and laughter, whilst all those that come about through yellow bile follow rashness and bitterness. This is why Hippocrates also said: 'Derangements of the mind with laughter are less dangerous, but when combined with seriousness they are more so.' He was referring to seriousness here as boldness. Again, all characters that are based on black bile are more silent, cultured and feature sad faces; conversely, all characters that have phlegm as their foundation are frivolous and unsettled.

Hippocrates stresses this elsewhere, for example in the first book of his *Epidemics*, when Silenus was deranged with singing and laughter. In the third book of his *Epidemics*, he mentions that a bold delirium occurred in the case of Philiscus: 'for he went mad around the middle of the day'.⁴ Yellow bile was the cause of the disease. In Cyzicus he says that a woman who had given birth to twin daughters went mad, and that her delirium was characterised by a sullen and despondent face, since she fell silent and did not listen to anyone.⁵ Black bile was the cause of her disease. He says that Pithion, who lived near the temple of the Earth, became delirious and went mad. In this case the cause of the disease was phlegm.

The person who administers care should know the multiple causes of these diseases. As Hippocrates says, if you know the cause of a disease, you can apply whatever is beneficial for the body from the remedies that will combat the disease. With diseases, whoever as regards healing wants to pose accurate questions, to reply correctly to anyone asking the same, and to contradict effectively must consider the following: first, what the causes are of diseases, which will allow for the promulgation of the reasons, so in the case of age, an adolescent falling ill will be particularly affected by the blood, as of course was shown earlier; second, the time of year, for in spring the blood is especially troublesome; third from diet, for one drink or food is productive of one humour, another of another humour, so for example blood follows on from drunkenness and gluttony. This is what Hippocrates determined when he learnt that Silenus had become ill after drinking. He mentions too the wife of a gardener who had suffered menopause as a consequence of her excessive eating. Fourth from place, if in fact a hot place effects hotter diseases; fifth from eruptions, for bloody pustules are

red and round, phlegmatic pustules are flat, and other pustules otherwise, just as Hippocrates says in his *Aphorisms*, where heat spots are shown to come about in spring and summer, since they are the result of blood and bile; and finally from colour, where the cause of a disease may be diagnosed as from the predominance of a humour.⁶ This is no less than the the most accurate way of reaching the best diagnosis, a system believed by Diogenes and his learned contemporaries to be akin to divination. These physicians discussed the colours at great length and divided the diseases according to their different appearances: the red, the bloody, and the flame, in which bitterness was excessive; and the black and the white, sufferers of which were called phlegmatics. The diseases resulting from these humours were called red, flame, black and white; but I do not understand how, by omitting so many pieces of evidence for the medical art and especially those which afford an accurate assessment of the diseases, they could assign the complete categorisation of the diseases to colours alone.

3

ON BLACK BILE

Black bile is a topic over which some have spent far longer than is needed for the art of medicine, whilst others instead have hesitated to promote any decent length of exposition, just as some have said nothing at all.¹ It is this last category of people that is more at fault than those who add useless information, because it is easier to cut out excess verbiage than to search for whatever has not been mentioned. Following this line of thought, Hippocrates seems to me as a prime example of someone who includes all that is vital for the conduct of this art, just as conversely Erasistratus is a prime example of someone who leaves out everything.² I think that the pupils of Plistonicus, Praxagoras and Philotimus, who discussed the humours in the greatest detail, usefully define some of what was only sketchily described by Hippocrates, although over some of his other ideas they argued erroneously.³ Of the more recent writers, the best books that have been written about black bile are by Rufus of Ephesus.⁴ You could say with good reason that Rufus wants nothing more than an attentive audience, not those who contradict purely for the sake of an argument, a habit which is prevalent among quite a few modern doctors, particularly those who describe themselves as Methodics or Erasistrateans or Asclepiadeans.

Some of these doctors have devised captious arguments which try to prove that any discussion about the humours is useless for medical requirements. My intention is therefore to consider what exactly is useful, as I usually do, and then turn to whatever follows on logically from this. I shall not hesitate in my conclusion to do away with any of those arguments which have been propounded by people who hold that the theory of the humours is worthless. To avoid loss of clarity during my discussion, I shall take just one name for each humour and so try to describe them throughout in these terms. However, I cannot do this properly without delineating the outward appearance of the humours. I shall do